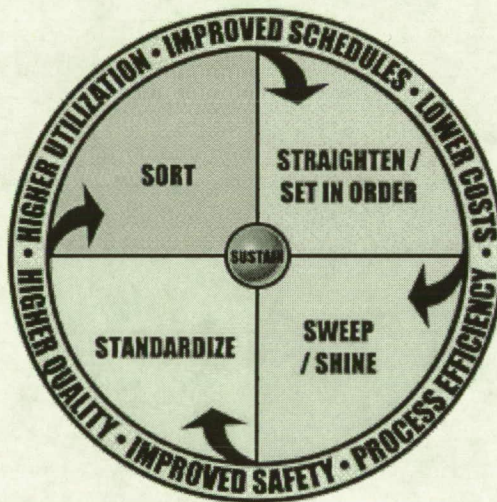


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5S Approach to Organization, Cleanliness,
Safety, and Standardization in the Workplace



Amy McCormick
West Shore Junior/Senior High School
SIFT Action Plan
Summer 2007

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My SIFT Experience

I spent my summer working for United Space Alliance, LLC (USA). In the Vehicle Assembly Building (VAB), it was my job this summer to go through and "5S" the available storage space. Over the years, countless items have been unnecessarily stored in the numerous rooms of the VAB. These rooms will soon become the precious office space and storage space for NASA's new Constellation program so there was much work to be done!

What the Teacher Will Do

At the beginning of the school year, the teacher will go over the basics of the 5S systematic approach. The teacher will then help students identify unnecessary items to be red tagged. These items will either be eliminated or relocated for long-term storage. The teacher will place great emphasis on safety. The teacher will properly label and store necessary classroom supplies. Lab supplies will be stored using MSDS guidelines. Evacuation maps will be clearly posted. Safety tape will be placed on the floor around safety equipment for easy location. The teacher will also give a safety message before beginning each lab activity. The teacher will give students time each Monday to 5S their notebook and she will test students each 9 weeks on the mastery of 5S standards.

What the Student Will Do

Students will live, eat, and breathe the 5S way of life. 5S will become part of their daily routine. At the beginning of the school year, students will learn the basics of 5S. Students and teacher will work together to achieve and maintain an efficient and safe work environment. Each Monday, students will 5S their notebooks using their Assignment Sheet. Each entry will be dated and placed in the proper order. At the end of each nine weeks, students will show mastery of 5S when they take their 5S/Notebook Test. Table captains will also assist in daily efficiency. The captain of each table will take student papers, make sure that they are all facing the same direction and place them in numbered order. They will also collect and distribute materials as necessary. All students will know to call a "Time Out" if any laboratory conditions are unsafe or are the least bit questionable.

Expected Outcome

After we have mastered the 5S lifestyle, Mrs. Jennifer Munson, Lean Six Sigma Black Belt for USA, will visit West Shore Junior/Senior High School to evaluate and certify our work area. After identifying our level of excellence, she will make recommendations of how to improve our rating. Mrs. Munson will also issue our class a 5S certificate of compliance. Our goal is to achieve and sustain a clean, safe, and efficient working environment.

5S Basics

整理・整頓・清掃・清潔・躰

5S is a methodology to systematically achieve total organization, cleanliness, safety, and standardization in the workplace. “5S” is a reference to a list of five Japanese words that “start” with the letter S. The 5S’s are defined in the table below.

Table 1: 5-S Terminology

Japanese Term	English Equivalent	Meaning
Seiri	Sort	Only essential items are in the work area
Seiton	Straighten	Keep items organized and labeled
Seiso	Sweep/Shine	Keep work space clean and safe; Clean as you go
Seiketsu	Standardize	Procedures, practices, policies, schedules, methods
Shitsuke	Sustain	Practice 5S daily – ongoing commitment

United Space Alliance, LLC (USA) uses the 5S approach to achieve and sustain quality, efficiency, and effectiveness in their work environment. In the Vehicle Assembly Building (VAB), it was my job this summer to go through and “5S” the available storage space. Over the years, countless items have been unnecessarily stored in the numerous rooms of the VAB. These rooms will soon become the precious office space and storage space for NASA’s new Constellation program so there was much work to be done!

I will bring the 5S methodology back to implement in the classroom environment. We will practice the 5S approach daily in the following ways:

1. Sort [Seiri (整理)] – Keep only necessary supplies, tools, and equipment in your work area.
 - a. Keep all work areas tidy and organized.
 - b. Get rid of clutter! Red tag to identify/remove unnecessary items
 - c. If you don’t use it, lose it! When in doubt, toss it out! Store long-term or discard.
2. Straighten/Set in Order [Seiton (整頓)] - Keep your workspace orderly.
 - a. Label/Organize necessary items - ABC, largest → smallest, most used → least used
 - b. Stocking of Supplies – in classroom/chemical storage/storage room
 - c. Clearly label all supplies
 - d. Properly label/store chemicals – see Master List of Chemicals for location
3. Sweep/Shine [Seiso (清掃)]- Keep your workspace clean and safe.
 - a. Cleaning/Quality/Safety – Daily upkeep
 - b. Systemized cleanliness – Clean As You Go!
 - c. Proper Lab Station Set Up
 - d. Custodial help
4. Standardize [Seiketsu (清潔)]- Keep the work environment standardized.
 - a. Classroom Policies and Procedures

1. Classroom expectations – know your responsibilities
2. 5S your Notebook each Monday with your updated Assignment Sheet
3. Notebook/5S Test at the end of each nine weeks
4. “What Did I Miss?” template for makeup folder when absent
5. Table Captains – help with daily efficiency
- b. Safety Procedures
 1. Floor markings for safety equipment identification/location
 2. Posted evacuation maps
 3. Safety Contract – signed and kept on file
 4. Time Out Cards – stops all laboratory activity if conditions are questionable
(When in doubt, call a time out)
 5. Safety Messages before “meetings”
 6. Beware FOD – Foreign Object Debris
- c. Checklists for activities - practice Process Mapping, Value Stream Mapping, and Procedure Modification for ideal process flow
5. Sustain [Shitsuke (躰)] – All 5S agreements and practices are part of daily management for all area users.
 - a. On-going monitoring
 - b. Making continuous improvements
 - c. Commitment by everyone

Students will learn the 5S basics and identify areas in need of improvement. The students will implement 5S practices into their daily routine. After we have mastered the 5S lifestyle, Mrs. Jennifer Munson, Lean Six Sigma Black Belt for USA, will visit West Shore Junior/Senior High School to evaluate and certify our worksite. After identifying our level of excellence, she will make recommendations of how to improve our rating.

Sunshine State Standards for Science Grades 6 - 8

Standard 3: The student understands that science, technology, and society are interwoven and interdependent.

Benchmark SC.H.3.3.1: The student knows that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.

Grade Level Expectations (seventh grade)

The student:

1. knows that science ethics demand that scientists must not knowingly subject coworkers, students, the neighborhood, or the community to health or property risks.
2. uses appropriate procedures for safety in the classroom, home, and community.

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References

5S Logo, Cover Page

"USA Lean Transformation Initiative." USA Homepage

<<http://usa1.unitedspacealliance.com/usahou/projects/lti/index.html>>

USA Logo, Cover Page

USA Home Page <<http://usago1.ksc.nasa.gov/>>



Summer 2007

Summer Industrial Fellowships for Teachers

Amy McCormick
West Shore Junior/Senior High School
SIFT Action Plan
Summer 2007



*Our Mission is to Serve Every Student
with Excellence as the Standard*



My Summer Experience at KSC

- This summer I worked in the Vehicle Assembly Building (VAB).
- I used the 5S systematic approach to improve the use of office space.



What the Teacher Will Do

- Explain the basics of 5S
- Give a safety message before each lab
- Properly store and label supplies
- Post station and evacuation maps
- Place safety tape on the floor to help easily locate safety equipment
- Stress safety

What the Student Will Do

- 5S their work environment and lab areas
- Use their Assignment Sheet to 5S their notebook each Monday
- Display mastery of 5S on the 5S/Notebook Test each grading period
- Table Captains will help with daily efficiency
- Keep lab areas safe and clean
- Call a "Time Out" if conditions are questionable
- Eliminate FOD – foreign object debris

Expected Outcomes

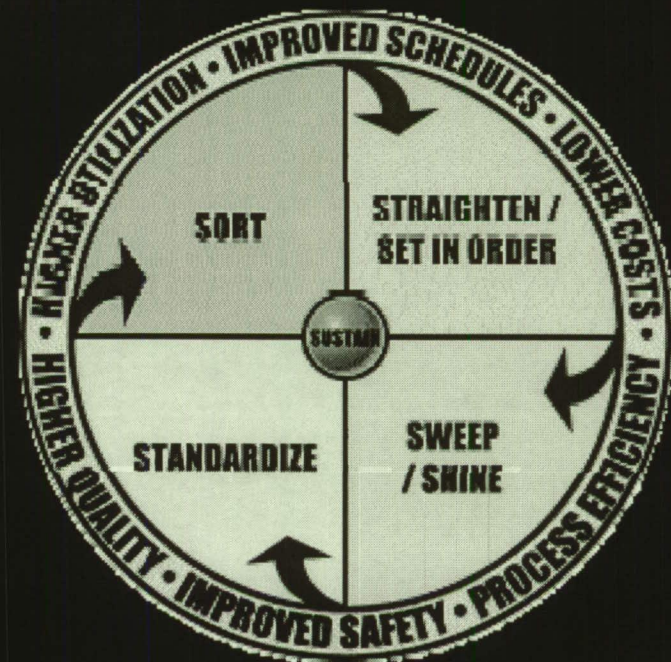
- Mrs. Jennifer Munson, Lean Six Sigma Black Belt for USA, will visit West Shore Junior/Senior High School to evaluate and certify our worksite.
- After identifying our level of excellence, she will make recommendations on how to improve our rating for a more efficient, safe work environment.

5S is a reference to a list of five Japanese words that “start” with the letter S.

- Seiri – to sort
- Seiton – to straighten
- Seiso – to sweep or shine
- Seiketsu – standardization
- Shitsuke – to sustain

5S is a method to systematically achieve total organization, cleanliness, safety, and standardization in the workplace. The steps of 5S are:

- Sort
- Straighten/Set in Order
- Sweep/Shine
- Standardize
- Sustain



Sorting

- Get rid of clutter.
- Red tag to identify/remove unnecessary items.
- If you don't use it, lose it.
- When in doubt, throw it out. (Disclaimer: does not apply to your Notebook – ask first!)

Red Tag to Identify/Remove Unnecessary Items





When In Doubt, Throw It Out!



Straighten/Set in Order

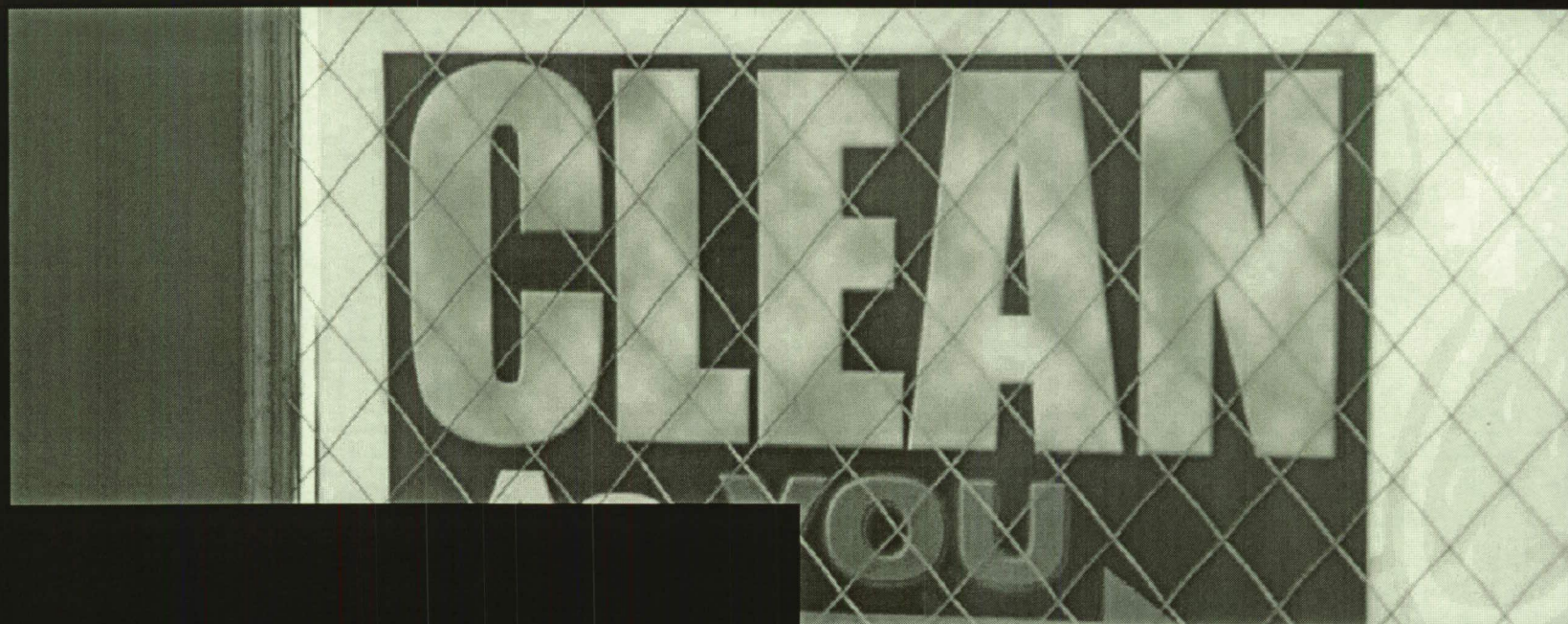
- Clearly label necessary supplies
- Organize supplies systematically
- Correctly label chemicals (MSDS)
- Correctly store chemicals (MSDS)

Clearly Label and Organize!



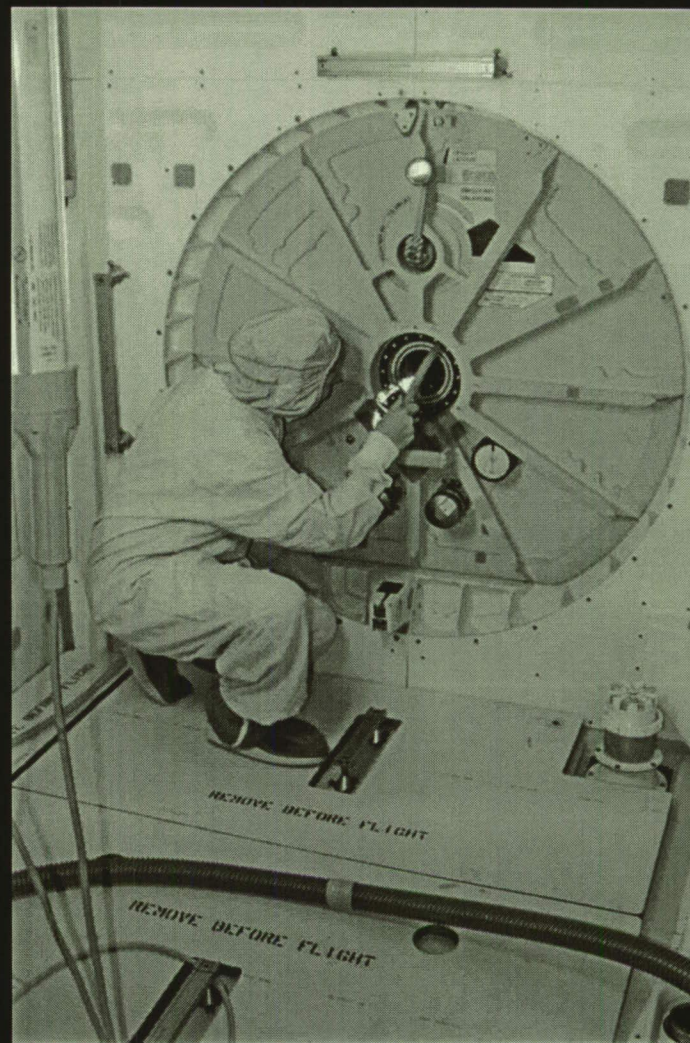
Sweep/Shine

- Daily Cleaning/Quality/Safety
- Clean As You Go!
- Proper Lab Station Set Up
- Custodial Help





Clean As You Go!



Standardize

- **Classroom Policies & Procedures**

Classroom Expectations

Notebook/5S Test each 9 weeks

Table Captains

5S Notebook every Monday

WDIM folder when absent

- **Safety Procedures**

Floor markings for safety equipment

Signed Safety Contract

Safety Messages

Posted evacuation maps

Time Out cards

Beware FOD – Foreign Object Debris

- **Checklists for activities**

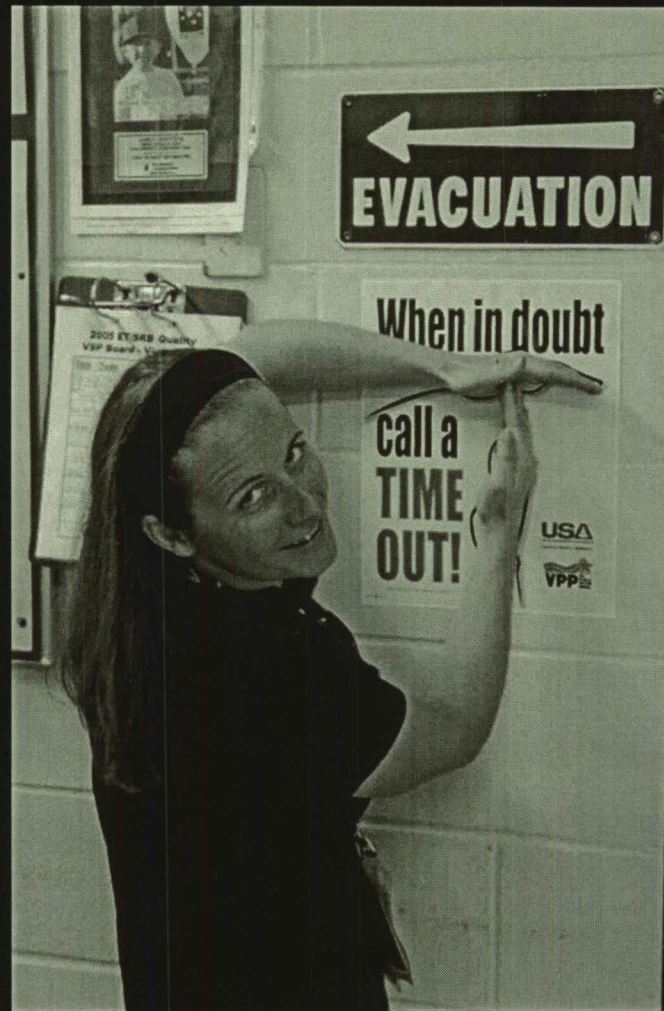
Lab Procedures

Process Mapping

Procedure Modification

Value Stream Mapping

When In Doubt, Call A Time Out!



REPORT DOCUMENTATION PAGE

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